GAME ANIMALS OF AMERICA

By W. T. HORNADAY

THE MENTOR

DEPARTMENT OF NATURAL HISTORY

SERIAL No. 113

Mountain Sheep Head

MENTOR GRAVURES

ELK
MOUNTAIN SHEEP
ROCKY MOUNTAIN GOAT

MENTOR GRAVURES

CARIBOU
BULL MOOSE
THE BISON LEADER

DOES anyone doubt that in North America the hunting of big game,—once marvelously abundant,—is fast becoming an extinct pastime? As a game animal, the American bison is gone. In the United States, antelope hunting is gone, forever. The Arizona elk is totally extinct. In the United States, mountain sheep hunting is extinct in all States save two: and it should be so in those also. Mountain goat hunting is possible in two States only. It is now next to impossible to find and kill a wild grizzly in the United States.

There are many persons, of whom I am one, who believe that in a brief span of years there will be no big-game hunting in the mountain States west of the great plains, save around the borders of big-game sanctuaries, such as the Yellowstone Park.

With the exception of the bison and the Arizona elk, we may even yet see in our mountain States good specimens of some of the big-game species that abundantly stocked them in pioneer days. We are glad that we live contemporaneously with the colossal moose and the unique antelope. We rejoice that we are on terms of intimacy with the lordly elk, and that we have a bowing acquaintance with the goat and sheep. We cherish the thought that we have seen real grizzly bears on their native rocks, and also that we have "done our bit," as the English say, in saving the great American bison from oblivion.

It is not good for red-blooded men to live in a land that contains no big game. It seems effeminate. To correct such a condition as that, the New Zealanders took thought and colonized in their country the European red deer; and that species has waxed numerous, and produced tens of thousands of deer, for food and for sport.

North America has produced a good quota of big game species; but in that line of native industry we are far surpassed by Asia; and by Africa

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ON THE MONTANA BISON RANGE
From a photograph taken in the summer of 1913 by H. W. Henshaw, Chief of the Biological Survey

we are left completely out of sight. Really, Africa seems to have been created as an ideal home for big game. Her array of apes, antelopes, carnivores, and thick-skinned beasts compels unbounded admiration.

While our game endures, let us make much of it, and appreciate it to the utmost. And it is not all of game enjoyment to kill it, and cut off its head, and let the bulk of the meat go into the discard. The highest type of big-game hunting is the finding of fine animals in their haunts, photographing them movably and unmovably, and then bidding them go in peace. To be really and truly ignorant of such distinguished American citizens as the moose and musk-ox, caribou, sheep, goat, antelope, deer and Alaskan brown bear, is reprehensible, and should be punishable by a fine.

Many wild animals are more interesting per capita than some men. To learn to know our best wild animals is like annexing new territory. It increases our mental and moral resources, and provides a new channel for the disposition of surplus wealth. Like Cupid's story, they never seem to grow old, and as long as one hoof or horn remains as a going concern, just that long our interest continues in the wearer thereof.

The most interesting side of every wild animal is its mind,—what it thinks, and why. First of all, however, we must know the personality of our animal and be able to speak its name as promptly as the politician names his voting acquaintances. To call an antelope a "deer" is to lose a vote.

The Saving of Big Game

The characteristic features of America's big game animals are to be treated as natural history. The wasteful slaughter of them is unnatural history. Ever since the days of Daniel Boone, the American pioneers and exploiters of Nature's resources have most diligently been exterminating our bison, elk, deer, moose, antelope, sheep, and goats. For twenty years we have been toiling to save the American bison from total extinction.

Thanks to the efforts of the United States and Canadian Governments, the New York Zoological Society and the American Bison Society, the buffalo now is secure against extinction. Our government now owns

and maintains six herds, having a total of about 570 head, and the Canadian Government owns about 1,600 head. Our chief hope is based on the herd in the Montana National Bison Range, now containing 134 head, living in a rich pasture of 29 square miles, capable of supporting 1,000 bison without the purchase of a pound of hay. That herd has risen from 37 head presented in 1909 by the American Bison Society. The Wichita and Wind Cave National Herds were founded by herds drawn from the New York Zoological Park, and presented by the Zoological Society.

Excepting for the white-tailed deer and the elk, it is to-day a grave question whether there will be any big game hunting in the United States twenty years hence.

The Prong-Horned Antelope

It is now painfully certain that nevermore will there be any hunting of the prong-horned antelope in our country. There has been none for several years, but for all that the remaining bands are everywhere (save in two localities) reported as steadily diminishing. Even in the Yellowstone Park the antelope herds are now but little better than stationary. Excepting the goat and musk-ox, the prong-horn is North America's most exclusively American species of big game. It is so very odd that it occupies a Family all alone. It is the only living hollow-horned ruminant that sheds its horns, every year.

But this nimble-footed rover is not fitted to withstand the slings and arrows of outrageous fortune A. D. 1916. It has no more staying power than a French poodle, and it wilts and dies literally at the first breath of adversity. It will not breed in captivity, nor does it live long in any kind of confinement. It is subject to an incurable mouth disease called lumpy-jaw, and will secretly and joyously carry the unseen germs of it for six months for the purpose of passing quarantine and inoculating an innocent herd in some unsuspecting Zoological Park.

PRONG-HORNED ANTELOPE
From a painting by Carl Rungius

Half a dozen Western States have little isolated bands of

MOUNTAIN SHEEP

antelope that they are trying to preserve; but all save two are steadily diminishing. In the Montana and Wichita Bison Ranges, of 29 and 14 square miles, efforts are being made to establish herds. Canada is making two large prairie preserves, under fence, especially for the purpose of saving the antelope from extinction. Taking all these efforts together, there is a fighting chance that the species eventually will be saved from oblivion, but at present the odds are very much against it. As a sport with the rifle, however, legitimate prong-horned antelope hunting is already as extinct as mammoth-spearing on glacial ice.

Mountain Sheep

Over the Rocky Mountain sheep there is a halo of glamour that is to every big-game hunter a veritable cloud by day and pillar of fire by night. Standing out conspicuously apart from all other American hoofed game, the big-horn thrills and challenges the gentleman sportsman as no other big game does at this time. (There are fashions, even in the hunting of big game!) A sportsman will go farther, spend more and endure more to get "a big ram" as a trophy of his manhood in the chase than for any other species. Why is it? It is because the old big-horn rams are found where the scenery is grandest and most inspiring; they are the keenest of eye, nose and ear of all our big game, and hunting them successfully means real mountaineering. In Africa a lady can kill a big elephant, but in the Rocky Mountains ladies do not kill big-horn rams with the rings of eight or ten years on their horns.

There are times when hunting the mountain goat becomes sport for men; but many a goat has been killed by an easy fluke. The old big-horn ram, with horns that are worth while, requires real hunting, and many a man has taken the long trail for one and gone back empty-handed.

I should be mighty sorry to see sheep-hunting become an extinct pastime; for ye gods! it is the acme of sport with big game! Elephant hunting (in India, at least) is tame in comparison. Colorado has proved, through 26 years of watchful waiting, that to any mountain sheep State, sheep can be brought back by protection. Twenty-six years ago the sheep of that State were reduced to a dangerously-small remnant, of only a few hundred head. Then the lid was put on, sheep-hunting was forbidden, and, strange to say, even the residents of the sheep mountains *elected to observe the law, and also to help enforce it!*

The result is a great triumph in protection, to which the commonwealth of Colorado points with pride. To-day that State contains a grand total of 7,482 sheep; and to-day the *wild* herds come down into

the streets of Ouray to be admired, and feted, and fed on hay and photographed. And last September when an urgent official request came to the State Game Warden for permission to kill six of Colorado's mountain sheep "for scientific purposes," the proposal was declared impossible without precipitating a riot of the populace.

The true big-horn ranges all the way from Pinacate Peak, in northwestern Sonora, Old Mexico, northward about to Latitude 56 in British Columbia and western Alberta. On the hot, black lava slopes of Pinacate, fearfully lacking in vegetation, the sheep grow small. The species culminates in southwestern Alberta, from the Waterton Lakes up to Wilcox Pass. The biggest head ever shot by a gentleman sportsman, so far as I know, had horns with a circumference of 17¾ inches; and the lucky hunter was Mr. A. P. Proctor, the wild-animal sculptor.

In the United States there are eleven States that still contain wild examples of mountain sheep, but in some cases the total number to a State is painfully small. New Mexico contains only 23 head. Sheep hunting is totally prohibited in all our States save two,—Wyoming and Washington.

No, good reader, mountain sheep do *not* "jump off precipices and alight safely on their horns." They never did; and they never will. Their necks are just as breakable as ours are.

Mountain Goat

In oddity and picturesqueness, the white mountain goat and the moose are rivals; and it is hard to say which species is entitled to the championship.

Fortunately for him, the goat is not much sought by white men as food; its head is not inordinately prized as a trophy, and therefore he will survive on his wild and awesome summits long after the last sheep head has gone to grace some hunter's "den," and its flesh has been devoured by the golden eagles.

The mountain goat looks a bit like a snow-white pigmy buffalo with small black horns, and long, shaggy hair. It carries its head low, and its stick-like legs give it a stilted and awkward gait. Its shoulders, neck and hindquarters are covered with long, coarse hair, and when the animal is seen on a mountain-top the first thought is: "How *very white* it is!" I have compared a clean goatskin with a snowbank, and the latter had only one small point the advantage. The goat's hair shows just a very faint tinge of pale yellow.

ROCKY MOUNTAIN GOAT

The real home of the Rocky Mountain goat is British Columbia, Alberta, and Southern Alaska, but detachments are even yet found sparingly in northwestern Montana, Idaho and Washington. The species should be introduced

CARIBOU
In its summer coat, with its antlers "in the velvet"

in the Montana National Bison Range, the Yellowstone Park, and a dozen other places, particularly in Washington and Oregon. It has plenty of stamina, it breeds successfully in captivity, and I believe that it can survive and thrive in any mountain region that is sufficiently cold and *dry*. It can *not* endure rain in winter! Everywhere in the United States where this remarkable species still survives, it should at once be given complete protection. In Glacier Park it is now almost a common occurrence for visitors to see wild mountain goats. I saw two myself, near the Sperry Glacier, in 1909, and the flocks are undoubtedly much more numerous to-day.

Mentally and temperamentally the mountain goat is a remarkable animal. It seems to have no nerves! Under no circumstances does a goat lose its head—until it has been shot. Only a few months ago (December 25, 1915) two badly rattled white-tailed deer jumped off the Croton Lake railroad bridge on the Putnam Railroad, near New York, a distance down of about 40 feet, and both were killed by the leap. Two mountain goats would not have done that. They would have "stood pat" to the last second, and waited to see what the locomotive really meant to do. Deer and sheep are hysterical animals, and when cornered will leap off ledges to certain death; but the goat, never! He stands at bay, and calmly waits to see what will happen. That is why Mr. John M. Phillips, State Game Commissioner of Pennsylvania, was able in 1905, at the risk of his life, to obtain at a distance of eight feet the surpassingly fine photograph shown herewith. Considering it in every way, I think that this is the finest wild animal photograph I have ever seen, and surely one of the best that has ever been made.

CARIBOU FAWNS
In the New York Zoological Park

I believe that the mountain goat will be the last of the big-game species of the open mountains of North America to be exterminated by man. The sheep, moose, caribou and musk-ox will go long in advance of the ubiquitous goat. In protected areas like Glacier Park and the Elk River Game Preserve of southeast British Columbia, the species should endure for a century, or perhaps for two centuries. Why not? In such protected sanctuaries they should finally increase to such an extent that the natural

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overflow will make legitimate goat-hunting in the surrounding mountains. I should be sorry to see goat-hunting become a lost art; for it is mighty fascinating,—provided you stop with two goats and can return with a clear conscience.

The Caribou

Europe and Asia have the reindeer, but North America has a truly grand array of caribou species. In size and geography they range all the way from the absurd little Peary caribou of Ellesmere Land, which looks like a goat with deer antlers upon it, to the giant of the Cassiar Mountains, known as Osborn's caribou. Roughly speaking, our North American species are divided by their antlers into two groups, the Woodland and the Barren Ground. The important species of the latter are the Greenland caribou, the Peary, the Barren Ground, the Grant and Kenai. Of the Woodland group the leading species are the Newfoundland, Canadian, Black-Faced, and Osborn's. The gravure shown herewith is a very fine presentation of the Canadian Woodland species from an oil painting by Carl Rungius, now owned by the Duquesne Club, Pittsburgh.

The Barren Ground caribou exists in the greatest numbers of any mammalian species, great or small, now inhabiting the earth. The immense throngs that have been seen by Warburton Pike, C. J. Jones and others, while on their annual southward migration, literally stagger the imagination. Undoubtedly there are millions of individuals, and they offer a sharp commentary on the ability of Nature to multiply her live stock, and keep it up to the highest standard, without any help from man.

Is it not a pleasing thought that even in this age of universal slaughter there is one big-game species that still

ELK
Its antlers are "in the velvet"—only half developed. The animal has its summer coat of hair

ELK HERD IN THE NEW YORK ZOOLOGICAL PARK

exists in millions, on our own continent? To-day the Barren Ground caribou is protected by distance and the frost king. But this condition is too bright to last. Ere long,—perhaps to-morrow,—the Canadians will build a railroad from Fort Churchill, on Hudson Bay, straight through the heart of the Barren Ground caribou range to the Arctic coast, and then the ranks of the caribou will be depleted.

The caribou are members of the Deer Family, but one and all they exhibit many unique features. Their antlers are flat, the females have horns, their muzzles are large and square-ended, their feet are very broad and spreading,—like snow-shoe hoofs,—and their heads are carried low. The caribou gait is a swift, far-striding trot.

In the United States caribou are found at two points only: in Maine and northern Idaho;—but we no longer guarantee the latter. South of the Barren Grounds of northern Canada the best localities for caribou are Newfoundland, the Cassiar Mountains, the Iskoot country of British Columbia, the White River country of western Yukon Territory and the Alaska Peninsula.

The Osborn caribou is a grand animal, every way considered. The white Peary caribou, of Ellesmere Land, is very small, its head is more deer-like than that of any other caribou, and it looks like a misfit white deer with imitation caribou antlers upon its head. Unlike all other members of the Deer Family, the female caribou has horns; but they are small and weak.

The Moose

The moose is an animal as odd and picturesque as if it had come to us straight from Wonderland. Walk between those colossal legs and under that high-holden body, gaze on those snow-shovel antlers, consider the amazing overhang of that nose, and then say where an equally amazing combination can be found on this continent.

This animal is the Colossus of the Deer Family. If his wits were equal to his bulk, no man with a gun ever would see a live moose save through binoculars, and we never would acquire any antlers save those discarded by the animal. The homeliest members of the Deer Family are its female moose in calving time, beside which warthogs and hippopotami are sirens and sylphs.

A full-grown bull moose in October or November is,

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BULL MOOSE—THE CHALLENGE
From a painting by Belmore Browne

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ANTLERS OF "GIANT" ALASKAN MOOSE
In the Reed-McMillin Collection, New York Zoological Park. The spread is 76 inches. Probably the finest pair of moose antlers "in captivity"

as we have already insinuated, a wonder. No mammoth, nor mastodon, nor sabretoothed tiger ever was any more so. I am glad that I have lived in the day of that astounding beast. I never yet really wished to kill a moose, even though I have often been told that I should shoot one, for the sake of my reputation as a sportsman. But I never did. I would like to see 100 moose in a week,—as I once came near doing,—but I do not like the thought of destroying a big bull moose.

The moose of the greatest horns and the longest skulls are found in Alaska. The Kenai Peninsula is for them the greatest of all places, and there the grandest antlers have been produced. The bull stands seven feet high at the shoulders,—and no man ever yet has weighed a whole adult animal,—so far as is known to this writer. The finest moose picture ever made, by lens or by brush, is the great painting owned by the New York Zoological Society, which was executed by Carl Rungius in 1915. The model that posed for that bull's antlers hangs in the Reed-McMillin collection of the National Heads and Horns, in the next room to mine, and the road for the doubting Thomases is short and easy.

No; the moose does not prefer to live in thick timber; although in Maine and northern Minnesota the timber of the moose is quite thick enough for all practical purposes. The ideal home of the moose is burned-over tracts of timber, wherein the brush grows rankly, the obstructing trees are absent, and in running or traveling the moose has only to stride over fallen trunks lying four feet high, and always about. The moose is the only land animal now living on this continent that is physically qualified, with a standing of 100 per cent, to travel fast over "down timber" and get away with it.

We must admit that in eastern captivity the moose cannot thrive anywhere south of Canada. The climate of New York city is like poison to moose, caribou and antelope. The salt-laden rains of winter, at 32° Fahrenheit are to blame. In New Brunswick, through wise laws rigidly enforced, (as a rule) the moose are increasing, even though hunted every year. In Maine, moose-hunting has been stopped. The great State game preserve in northern Minnesota contains many hundred moose, quite well protected. Strangest of all, there now are hundreds of moose in northwestern Wyoming, where the species long has been absolutely protected, and there are about 700 in the Yellowstone Park.

The Musk-Ox

During our own times, the Barren Ground musk-ox has been completely exterminated throughout the region west of the Mackenzie River, and also eastward from the Mackenzie for about 500 miles. Only seventy

years ago, or thereabouts, herds of live musk-ox were found about fifty miles southeast of Point Borrow; but since that time the species has been exterminated throughout an area as long as from New York to Chicago.

MUSK-OX IN THE N. Y. ZOOLOGICAL PARK

To me every living musk-ox is a source of continual wonder. I am staggered by the fact that a warm-blooded animal, quite sheep-like in its general nature and mode of life, and which lives well in New York City, can survive and thrive and breed and be happy on the most northerly land in the world. The fact that whole herds of musk-ox can find food throughout the awful Arctic night, survive storms of unbelievable violence and duration, and cold that the human mind scarce can comprehend,—and voluntarily live under such conditions,—seems almost beyond belief.

And yet here in New York, wet in winter and hot in summer, we keep musk-ox comfortable in captivity for five years; and they do not suffer from the heat as much as do the men who take care of them. A part of our success is due to the fact that we keep our musk-ox *dry*, and never allow cold rains to come upon them. They have not yet bred; and we are at a loss to understand why.

A naturalist-historian given to light speaking might be tempted to say that the two musk-ox species were developed and placed in the frozen North for the support of explorers, and the promotion of geographic knowledge. For example, without the musk-ox herds as a base, Peary might never have attained the North Pole. It was he who killed and ate a musk-ox at the most northerly point of land in the world,—the northeast corner of Greenland. Whole herds of musk-ox have been killed and eaten by hungry explorers and the Eskimos and their dogs. The flesh of this animal should taste more like mutton than beef, but the man does not live who could distinguish it from beef of the same age. Evidently there are conditions under which a musk-ox bull has a perceptibly musky odor, but I have never been able to detect the slightest trace of it in any of the animals of my personal acquaintance.

There are two species. The *White-Fronted Musk-ox* has a broad band of soiled white hair across its face, just below the horns; and it inhabits Greenland and all the islands and lands westward thereof, down to the mainland of North America. The *Barren Ground Musk-ox* is the one of

the Barren Grounds of northern Canada, and its lowest latitude is 64°, at the head of Chesterfield Inlet, which is at the northwestern corner of Hudson Bay.

Like nearly all the large land animals, the musk-ox is of gregarious habit, and maintains itself in herds of small size, usually not exceeding thirty or forty head. Its sharp, down-dropping horns seem to have been specially designed by nature to puncture the hide of the big white arctic wolf, which seeks big game at its farthest north. Whenever a musk-ox herd is attacked by wolves, or by dogs, the adult bulls and cows immediately form themselves into a hollow circle, with the calves inside; and thus they stand literally shoulder to shoulder, facing outward with horns at the "ready," quite able to repel all attacks save those with firearms. If a dog or wolf comes near enough to a musk-ox so that there appears to be a chance to impale it, out rushes the musk-ox in a swift charge. Usually the nimble footed canine escapes unharmed, and as soon as it is beyond reach the musk-ox quickly returns to his place in the circle. The definiteness and precision with which the charge is made and the return accomplished shows a high degree of strategic intelligence; and thus is the fittest enabled to survive.

The musk-ox has two coats of hair—a sweater and a rain-coat. The sweater is of fine and dense fur, practically impervious to cold. The rain-coat is a suit of rather long and rather coarse straight hair, which hangs over and completely covers the inner coat, for the purpose of shedding snow and rain. The body color of the animal is a rich chocolate brown, and the legs are dull gray. Naturally one would expect to see a musk-ox provided with a broad, spreading hoof, like the snow-shoe hoof of the caribou; but this is not the case. The musk-ox hoof is rather small and compact.

Structurally this remarkable animal is half ox and half sheep,—just as its generic name, *Ovibos*, implies. It has *no* visible tail, and its drooping horns strongly resemble those of the Cape buffalo, of Africa.

For four years the New York Zoological Park has maintained the only herd of musk-ox ever kept in captivity. It started in 1910 with six animals, three of which still survive.

A MUSK-OX

SUPPLEMENTARY READING

THE AMERICAN NATURAL HISTORY *By W. T. Hornaday*

OUR VANISHING WILD LIFE *By W. T. Hornaday*

FOUR-FOOTED AMERICANS AND THEIR KIN *By M. Wright*

BIG GAME OF NORTH AMERICA *By G. O. Shields*

OUR BIG GAME *By D. W. Huntington*

*** Information concerning the above books and articles may be had on application to the Editor of The Mentor.

In about three weeks vacation days will be over and the fall season for reading clubs and home reading circles will begin. There are hundreds of clubs using The Mentor—some as their regular course for the season, others as supplementary to their own courses. During June we had many demands from reading clubs for information concerning The Mentor plans for next year. This information was wanted in most cases for use in club booklets which were then in course of preparation. In order to meet the needs of reading clubs we prepare plans of The Mentor far ahead. Our numbers for the year 1917 are already scheduled, and some of them are in actual preparation. Our descriptive booklet tells all about future as well as past numbers.

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I do not think that the members of The Mentor Association who are not active in reading clubs appreciate what The Mentor is doing for club work. We could make up a book many times the size of The Mentor simply out of the letters of appreciation that we have received from clubs all over the country bearing testimony to the service that we give. The following, just received, is a fair example:

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"Some time ago you sent me a suggested program for the study of South America. The club of which I am president has just voted to study that subject, and they are following the program that you laid out, and it is so much better than anything that we could have laid out for ourselves that it saves the program committee a great deal of work. We hardly see how you can afford to do this, but we want to express our appreciation."

This letter is really typical. A great many ask us how we "can afford to do this work" for nothing. Some offer to pay. So let us make it clear now to every member of The Mentor Association that the preparation of special programs and courses of reading is a regular part of The Mentor Service, and that we give it freely and gladly. The service includes other things besides. We answer questions on all kinds of subjects in the various fields of knowledge. Our daily mail is heavy with inquiries, and we give the questioners the benefit of the knowledge and experience of recognized authorities.

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Just another word about programs. Some people do not understand what a program for a reading club means. The ordinary program is so slim and elementary that there is no inspiration in it. We prepare programs that contain the meat of the subject in condensed form, and we supply appropriate introductions to the meetings, and suggest supplementary reading matter. In special cases, such as that of a music course, we furnish lists of appropriate compositions to be played in the meetings as illustrations. We make programs on many subjects. Of course we look forward to a time when it will not be necessary for us to make special programs on most subjects, because they will be covered in The Mentor itself. At present we supply a special program on South America. This will not be necessary in another year, for we shall have a series of Mentors that will cover South America, and they will supply all the material necessary for clubs studying the subject. The first number in the South American series has just appeared, so Mentor readers can judge of the character and scope of these numbers.

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Write in at once and get our booklet descriptive of The Mentor Service. In this booklet we have arranged The Mentors in special courses, suitable for any number of meetings of a club, from three up to twenty or thirty. We also give full directions as to the use of The Mentor in a reading club. Read this booklet and you will find that The Mentor is not only a source of pleasure and profit in its unit form as it appears twice a month, but that each unit is a stone in a rapidly growing structure. There is no need of talking about what it will look like when this structure is completed, for of knowledge there is no end. The Mentor institution will simply go on growing. In three years of existence, it has already come to assume an impressive aspect with its array of interesting departments, each rich in information and beautiful illustration. You will appreciate this if you send for our book, and read it.

W. D. Moffat

EDITOR

Game Animals of America

MOUNTAIN SHEEP

Monograph Number One in The Mentor Reading Course

THE mountain sheep (genus *Ovis*) is a gallant mountaineer. It is a fine, sturdy animal, keen eyed, bold, active and strong, and is always found amid scenery that is grand and inspiring. Its favorite pastures in summer are the treeless slopes above the timber-line; and even in winter, when the raging storms drive the elk and deer down into the valleys, the mountain sheep descends for only a short distance. The mountain sheep is a bold climber. Its legs are robust and strong, and when pursued it can dash down steep declivities in safety.

It is very easy to recognize any adult mountain sheep by the massive round curving horns. No wild animals other than wild sheep have circling horns.

The largest of specimens of wild sheep are found in Asia. There are six species in America. They are scattered from the northern states of Mexico through the Rocky Mountains, almost to the shore of the Arctic zone.

The young of the mountain sheep are born in May or June above the timber-line if possible, among the most dangerous and inaccessible crags and precipices that the mother can find. The lamb's most dangerous enemy is the eagle, and often the mother cannot protect her young from this foe.

Probably the most familiar of the mountain sheep is the big-horn or Rocky Mountain sheep (*Ovis canadensis*). Formerly this was quite abundant, but so persistently has it been hunted that the species exists now only in small numbers and in widely separated localities.

The general color of the big-horn is gray brown. They are well fed all the year round. The female has not the long curving horns of the male. Her horns are small, short, erect, and much flattened, in length from five to eight inches.

Other species of mountain sheep are the California or Nelson's mountain sheep (*Ovis nelsoni*) a smaller animal than the big-horn and of a pale salmon gray color; the Mexican mountain sheep (*Ovis mexicanus*) found in the state of Chihuahua, Mexico; the white mountain sheep or Dall's sheep (*Ovis dalli*) of Alaska, whose hair is pure white, when it has not been stained by mud or dirt; the black mountain sheep (*Ovis stonei*) of northern British Colombia, which is distinguishable by the wide spread of its horns, the dark brown color of its sides and the white abdomen; and Fannin's mountain sheep (*Ovis fannini*) a newly discovered species which was found first on the Klondike River, Alaska, in 1900.

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Game Animals of America

ROCKY MOUNTAIN GOAT

Monograph Number Two in The Mentor Reading Course

THE Rocky Mountain goat, or the white goat (*Oreamnos montanus*), is the only American representation of the many species of wild goat-like animals so numerous throughout the Old World. Its habitat extends from northwestern Montana to the head of Cook Inlet, but it is not found in the interior nor in the Yukon Valley. It is one of the most picturesque and interesting wild animals on the continent of North America. It ranges on the grassy belt of the high mountains just above the timber-line. It seems to like particularly the dangerous ice-covered slopes over which only the boldest hunters dare to follow it. On the coast of British Columbia, however, the white goat sometimes descends very near to tide water.

The white goat is odd in appearance. At first glance it seems to be a slow, clumsy creature; in fact, it is the most expert and daring rock climber of all American hoofed animals. The hoofs are small, angular and very compact and consist of a combination of rubber-pad inside and knife-edge outside to hold the goat equally well on snow, ice or bare rock. It is said that goats will cross walls of rock which neither man, dog nor mountain sheep would dare attempt to pass. Sometimes they walk along the face of a precipice of apparently smooth rock; yet in doing so they frequently look back and turn around whenever they feel so inclined. The white goat is built something on the order of a small American bison. Its head is carried low and the horns are small and short. Its hair is yellowish-white. Next to the skin is a thick coat of fine wool through which grows a long outside thatch of coarse hair.

It is an animal of phlegmatic temperament. A story has been told of one goat, whose "partner" had been shot, which deliberately sat down a short distance away and watched the hunter skin and cook a portion of his dead mate.

Its flesh is musky and dry and it is not palatable to white men except when they are exceedingly hungry. Its skin has no commercial value. For these reasons and also because it is hard to reach, the Rocky Mountain goat is not likely to be exterminated very soon.

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ILLUSTRATION FOR THE MENTOR, VOL. 4, No. 13, SERIAL No. 113

FROM A PAINTING BY CARL RUNGIUS

ELK

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Game Animals of America

ELK

Monograph Number Three in The Mentor Reading Course

THE American elk or wapiti (*Cervus canadensis*) is as large as a horse, handsomely formed, luxuriantly maned, carries its head proudly, and is crowned by a pair of very imposing antlers. The male elk is at its handsomest in October or November, when his skin is bright and immaculately clean and his fine antlers have just been renewed.

The elk has small and shapely legs. It avoids swamps and low ground and likes to frequent mountain parks. It is also a forest animal. Formerly it ranged far out into the western edge of the great plains and it was accustomed in summer to ascend the Rocky Mountains to the very crest of the Continental Divide. Today, however, it is abundant in one locality only—the Yellowstone National Park and the country immediately surrounding it. Elk are also found in small numbers in Washington, Oregon, Colorado, Montana, Idaho and on Vancouver Island, British Columbia. However, elk are easily bred in confinement, and many good herds have been established in great private game preserves. In addition to these, there are many small herds in private parks.

The elk sheds its antlers each year. The antlers of one of the largest males in the New York Zoological Park dropped on March twenty-first nine hours apart. On April 8th each budding antler looked like a big brown tomato. Ten days later the new antlers were about five inches long, thick and stumpy. By May 10th the elk was shedding its hair freely. On June 18th the antlers were at full length. By August 1st the short red summer coat of hair was established, and the antlers were still "in velvet." The elk then began to rub the velvet from its antlers against the trees.

By September 15th the summer coat of the elk herd had been completely shed. On October 1st the entire herd was at its best. All antlers were clean and perfect. The hair of the skin was long, full and rich in color. This is the mating season of the elk when the bulls are aggressive and dangerous.

Elk are often very unsuspicious and at times so stupid that hunting them is not so exhilarating a sport as it might seem.

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CARIBOU

Game Animals of America

CARIBOU

Monograph Number Four in The Mentor Reading Course

WITH the exception of the musk-ox, the caribou is the most northerly of all hoofed animals. This animal not only roams on the vast Arctic waste above Great Slave Lake, known as the Barren Grounds, but it also ranges over the west coast of Greenland, along the edge of the great ice cap and perhaps over the entire coast of Greenland. Wherever the naked ridges and valleys yield it food, the caribou may be found.

The caribou is a rather odd-looking creature. It is interesting to note that Nature has provided it with a body especially made to enable it to brave the terrors of a frigid climate. Its legs are thick and strong and its hoofs are expanded and flattened until they form very good snow-shoes. Where a moose sinks in, a caribou is able to walk over snowfields and quaking marshes. The skin of the caribou is covered with a thick, closely matted coat of fine hair; through this grows the coarse hair of the raincoat. This makes a very warm covering—in fact the warmest on any hoofed animal except the musk-ox. It is like a thick, felt mat.

The caribou is the American reindeer. It has antlers, long and branching. As a species they may be grouped under two heads—the Woodland caribou (*Rangifer tarandus caribou*) and the barren ground caribou (*Rangifer tarandus articus*). Each of these two groups may be sub-divided several times. However, it is difficult to distinguish these sub-species. The chief characteristics are minor differences in the antlers, but even here great difficulties are encountered. The antlers are subject to thousands of variations, and as a result no two pairs ever are found exactly alike. It has been said that if ten pairs of adult antlers of each of the so-called nine species were mixed in one heap, it would be almost impossible for even an expert to separate them all correctly into their proper groups.

Of the two great groups, the Woodland caribou roams through the pine and spruce forests and also the prairies of Newfoundland, Nova Scotia, New Brunswick, Northern Maine, Quebec, Ontario and Manitoba. It is a large animal with strength enough to vanquish the strongest man in about one minute. Its shoulders are sharp and high, and its head is held low and thrust straight forward. The Woodland caribou of Maine has a body color of bluish brown and gray. In October, however, its new coat is of the color known as seal brown. Its antlers are short and have more than thirty points. As a whole the antlers have the appearance of a tree-top.

The barren ground caribou is extremely like the average reindeer of Siberia and Lapland. It is a rather small animal with immense antlers. The center of their abundance today is midway between the eastern end of Great Slave Lake and the southeastern extremity of Great Bear Lake.

The natural food of the caribou is moss and lichens. In captivity very few survive many months without a regular diet of moss. Full grown Woodland caribou consume about seven pounds of it daily.

It is only necessary to watch a caribou walking to see in this animal the true born traveler. This is one of the most peculiar characteristics of the species. At stated periods in the spring and autumn they assemble in immense herds and migrate with the compactness and definiteness of purpose of an army of cavalry on the march. This is most noticeable on the Canadian Barren Grounds. The herd moves northward in spring and in the early winter moves southward. Several of these monster migrations have been witnessed.

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BULL MOOSE

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Game Animals of America

BULL MOOSE

Monograph Number Five in The Mentor Reading Course

MAGINE an an animal standing between six and seven feet high at the shoulders, its legs four feet long, its neck and body covered with a heavy thatch of coarse, purplish gray hair, and its huge head crowned with massive antlers spreading from five to six feet in width! That is the moose (*Alces americanus*). It is the largest animal of the deer family. The only way to appreciate a moose is to see an adult animal alive and full of strength, striding through the forests of Canada or Alaska.

The word moose is a North American Indian name which is said to mean "cropper" or "trimmer," from the animal's habits of feeding on the branches of trees. The moose can be recognized by its broad, square-ended, overhanging nose, its high hump on the shoulders, its long, coarse, smoky gray hair, and the antlers of the male, which are enormously flattened and expanded. Moose are found in northern Maine, and some other parts of the Northern States, Canada and Alaska.

It is hard to kill a moose. Most of those killed are shot from ambush. In the autumn months the moose hunter may sometimes make a horn of birch bark and, concealing himself beside a pond at nightfall, may by imitating the call of the cow moose attract a bull within shooting distance.

The moose calf is born in May and is at first a grotesque looking creature with long, loose jointed legs and an abnormally short body. By the time the calf is a year old it has taken on the colors of adult life.

Unlike most members of the Deer Family, the moose does not graze. It eats the bark, twigs and leaves of certain trees, and also moss and lichens. It is strictly a forest animal and is never found on open, treeless plains. Being very fond of still water, it frequents small lakes and ponds.

One of the largest bull moose on record was seven feet high at the shoulders and had a girth of eight feet. The largest pair of antlers recorded have a spread, at the widest point, of 78 inches. The weight of the antlers and the dry skull together is 93 pounds.

The bull moose has under the throat a long strip of skin called a "bell." In the adult male animal this bell is sometimes a foot in length The female moose has no antlers, and out of every thousand females only one has a bell.

In captivity the moose is docile, and affectionate. They have even been trained to drive in harness. But owing to the peculiar nature of their digestive organs, they cannot live long upon ordinary grass or hay. Green grass is fatal to them.

During the deep snows of winter moose herd together in sheltered spots in the forest. They move about in a small area and by treading down the snow form what is called a "moose yard."

The Alaskan moose has been described as a new species (*Alce gigas*). It is said to be a giant in size. Ideas of this animal are greatly exaggerated, although it is true that its antlers are really immense.

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THE BISON LEADER

Game Animals of America

AMERICAN BISON

Monograph Number Six in The Mentor Reading Course

THE American bison or buffalo (*Bison americanus*) because of its great size and imposing appearance, is the most celebrated of all American hoofed animals. It has been practically exterminated, but now that it is given adequate protection, the buffalo, which breeds rapidly in captivity, has been saved from total disappearance.

The buffalo was first seen by white men in Anahuac, the Aztec capital of Mexico, in 1521, when Cortez and his men paid their first visit to the menagerie of King Montezuma. It was first seen in its wild state by a shipwrecked Spanish sailor in southern Texas in 1530.

Once the buffalo roamed over fully one-third of the entire continent of North America. Not only did it inhabit the plains of the West, but also the hilly forests of the Appalachian region, the northern plains of Mexico, the Rocky Mountains, and even the bleak and barren plains of western Canada. The center of abundance, however, was the great plains lying between the Rocky Mountains and the Mississippi Valley.

In May, 1871, Col. R. I. Dodge drove for twenty-five miles along the Arkansas River through an unbroken herd of buffaloes. According to Dr. Hornaday's calculation, he actually saw nearly half a million head. This was the great southern herd on its annual spring migration northward. Altogether it must have contained about three and a half million animals. In those days mighty hosts of buffaloes frequently stopped or even derailed railway trains, and obstructed the progress of boats on the Missouri and Yellowstone rivers.

When the Union Pacific railway was completed in 1869, the buffaloes were divided into a northern herd and a southern herd. By 1875 the southern herd had been practically annihilated. Five years later the completion of the Northern Pacific railway led to a grand attack upon the northern herd. Three years later this was almost entirely wiped out.

The future of the buffalo depends upon the National herds and ranges, of which the United States has six game preserves. In zoological parks this animal becomes sluggish and rapidly deteriorates from the vigorous standard of the wild stock.

The largest buffalo ever measured by a naturalist is the old bull which was shot by Dr. Hornaday on December 6, 1886, in Montana, and which now stands as the most prominent figure in the mounted group in the United States National Museum. This is the animal whose picture adorns the ten dollar bill of the United States currency. The height of this buffalo at the shoulders was 5 feet, 8 inches, and its length of head and body to the root of the tail was 10 feet, 2 inches. Its estimated weight was 2,100 pounds.

The buffalo begins to shed its faded and weather-beaten winter coat of hair in March. For the next three months he is a forlorn looking creature. By October, however, the new coat is well along, and in November and December the animal is at its best.

Buffalo calves are born in May and June. At first they are a brick red color, but this coat is usually shed in October.

The flesh of the buffalo very closely resembles domestic beef. In fact, it is impossible to distinguish the difference.

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